

Mr. Chairman and Commissioners, thank you for giving me the opportunity to testify before you today. I am the President of a not-for-profit corporation whose purpose is to assist state governments in their efforts to use information services and technology. The subjects you are investigating: practices for effective management of IT and of IT projects, and the impact of the availability of advanced technology on the methods of governing and public sector service delivery, are at the heart of our charitable mission. Public Interest Breakthroughs' particular focus is in the area of human services. We believe that information technology can be a powerful tool when it is deployed effectively on behalf of underprivileged children and families. Unfortunately, state government IT projects in the human services area have too often been ill conceived, poorly managed, ineffective in bringing about improved outcomes, overly expensive and fraught with risks of all sorts. In the area of high profile large project failures, in human services and other fields, California has unfortunately too often been at the center of the nation's attention. Therefore, I believe your hearings are timely and important, as the effective management of IT and IT projects are critical success factors for governing in the new century.

### **Fundamental Change**

California state government at the dawn of the 21<sup>st</sup> century is the model of a large bureaucratic, industrial age institution. The executive branch is divided into agencies that are again divided into departments, which subdivide into bureaus, which manage individual programs. Management structures, funding streams and information flows reflect this hierarchical structure, and in fact reinforce the boundaries between individual bureaus and programs. The dividing lines between government programs, which are so stark and inviolable when viewed from within the bureaucracy are blurred, or not seen as valid when viewed from the perspective of modern citizens and businesses.

The Internet and the convergence of powerful new data management, network management and computing technologies have led to new private sector organizational and service delivery models that render the "stovepipe" organizations of our industrial age past hopelessly inefficient by comparison. Through merger and acquisition and by other means, we have seen corporate America begin to restructure itself to leverage integrating technologies to enable higher value services and products at lower costs. The use of IT to empower organizations to improve the alignment of their capabilities with their customer's expectations has resulted in dramatic improvements in our nation's macro-economic productivity. The historic expansion of our national economy without the attendant inflationary pressures of growth seen in our earlier industrial economy is evidence of the productivity related benefit of IT to corporate America. Business and private sector organizations are either transforming themselves according to the rules of the information age or finding themselves overcome by competitors who have.

Government is more deliberative, and organizational change here is more difficult than in the private sector. We are unlikely to see wholesale changes in the organizational structure of state government. Because of the nature of our tri-cameral system, legislatures are wary of providing the executive, or for that matter the judicial branches, with too much latitude in spending allocated funds. Appropriations are likely to continue to be directed to individual programs and not to be allocated for the discretionary use of agency executives seeking broad cross program outcomes. This tendency to operate in such a complex bureaucratic manner leaves California and other state governments with programs that are often comparatively inefficient and ineffective when compared to modern IT enabled corporations. This poor performance too often results in poor service levels to citizens and poor performance against the aggressive outcome measures demanded by California citizens.

In order to maintain the legitimacy government must have to effectively govern, California must aggressively adopt the tools of the information age to overcome its structural limitations. California must be able to use IT to create a virtual enterprise that provides electronic services across program boundaries, designed to meet the needs of citizens not the restrictions of a government structure hampered by politics and bureaucratic processes.

The fundamental purpose of all IT investments in government must be to improve its performance. Improving performance in terms of achieving public policy objectives must be the only reasons for IT expenditures. IT can, and should be deployed to coordinate cross program initiatives in a manner that leverages each program's different strengths and purposes towards meeting their common goals and societal objectives. Cross program initiatives require an infrastructure that enables ongoing and effective communications between workers in different program bureaus, data sharing between entities, outcome measures drawn from diverse sources, universal access for interested parties, and most importantly accountability for assigned roles. These requirements can be best achieved through the application of IT.

All that is best and worst about California's use of technology was evident in an initiative that was known as Info-California. This Ford Foundation Innovations award-winning concept for placing government kiosks around the state was the subject of a case study at the John F. Kennedy School of Government at Harvard University. Those who originally conceptualized Info-California were in the vanguard, calling for citizen access to conduct electronic transactions, across multiple programs from kiosks placed in public areas, like shopping malls, around the state. The concept called for a user-friendly application interface that would allow citizens to register vehicles, apply for social service benefits or jobs, and to execute a variety of transactions. The technology was well understood and the project was initiated by data center teams. Unfortunately, the kiosk never was available to actually conduct business. It provided online brochures, but never really allowed transaction processing. Info-California was a technology project,

and therefore, according to state practice, had technology leadership. The project was led from the Health & Welfare Data Center. Info-California was presented as a technology solution to a broad problem of citizen access and poor service levels, but program leadership were never engaged.

The specific business objectives, in terms of defining the programs that could be accessed, the data that should be made available, and the service improvements that were to be achieved were never fully defined, yet the technology and network vision was what won awards. When the technology itself became outmoded, very quickly after conception, the project died. The technology was the project, not the improvement of services. Despite the awards the taxpayers never realized any benefit from the project. The same service objectives from that effort are now the goals of the e-government crowd, but unless the technology community sees its role as implementing program objectives, and the policy and program management community takes leadership of e-government, Internet initiatives will suffer the same fate as Info-California.

## **IT Governance in State Government**

### **Project Leadership**

There is nothing magical about information technology that automatically creates value for those who spend money on it. IT only delivers benefits when it enables new business capabilities or improved processes. The value of IT is in enabling process options that would not have been possible without new information management capabilities. IT projects are not really IT projects at all, they are business improvement projects that happen to require a set of advanced tools in order to achieve their business objectives. Therefore, business leaders who own responsibility for achieving the business improvement must lead the projects. The business of government is to achieve public policy objectives therefore public sector IT projects must be led by those who are responsible for achieving those public objectives.

I do not mean to diminish either the importance of IT as a tool of transformation, nor the need for technical expertise, project management skills and other capabilities that are often associated with technologists. Perhaps an analogy from CalTrans will help put the technologists' role in proper perspective. Engineering is an essential skill on highway projects, as is capable large project management. However, we do not delegate leadership of highway projects to experts in those fields. Engineers and contractors execute the design and construction of highways, but only after locations are selected, property rights are acquired, economic development objectives are defined, environmental issues are resolved, etc. The engineers are experts who transportation officials call upon to define design options. It is the program manager's role to evaluate the expert's recommendations to select the options that best achieve the public policy objectives that created the need for a new road. Contractors scrape the

road, lay the concrete but do not decide which communities will have an exit ramp off the new road. Technologists are the equivalent of contractors and engineers, they are the experts that assure that program leaders are aware of their options, and once the user requirements analysis and the process redesign is completed, technologists build and deploy the systems that implement the new designs.

The focus of public sector IT projects must always be on achieving the underlying business improvement that drives them. When problems or issues develop over the course of a project the focus cannot be on making the technology work, it must be on making the business plan work. The infamous CA DMV Database Redesign Project was the classic example of the focus of a project being misdirected towards making a technology work. The IT management objective of converting hierarchical databases to relational databases completely overwhelmed any potential service benefits that the citizen might derive from that conversion. When technology problems became insurmountable the project's IT-only management team kept reinvesting more and more money and time to try and get it to work. There was no one to question whether the experts were correct when they advised that the DMV must move to relational technology to meet their business needs, because there were no clearly articulated business benefits for the project, and no business leaders involved in its definition or management. Senior policy managers only became involved when the disaster of that project was finally realized, and the Governors office and the Agency leadership only became involved when project management became disaster management. That is too late.

All application planning, analysis, development, and deployment projects must be managed from within the program area that is to derive the business benefits. The role of program management is to assure that the project succeeds in terms of achieving the business improvement that is the purpose of the IT initiative. The goal of the project cannot be to prove the technology decisions made at the onset of the project were correct. If the technology issues become too costly or difficult over the course of a project the program leadership should expect the IT experts to present options for meeting the business objective with alternative approaches, describing the risks and benefits associated with each option. Technologists must participate as experts in the same manner as economists, engineers, accountants, and lawyers participate in other public initiatives. Leadership must not abdicate its responsibility for meeting public expectations to experts, in IT or in any other policy or program area. Only by housing IT application initiatives within the program areas can we assure that meeting program objectives will always be paramount for each phase of the project.

One could question whether program managers have a sufficient knowledge of IT to lead the large-scale initiatives that are common in California. If one accepts the premise that IT project are actually business improvement projects that use IT, then one can accept that IT proficiencies are not the most critical success

factors for successful project leadership. For an individual to effectively lead an IT enabled project they must have project management skills. The project executive must also have a sufficient aptitude for IT to be able to understand the advice and risks as presented by the more technical members of their teams. He or she must have a clear understanding of the business processes they are affecting and be responsible for achieving the objectives of the project. The project director must also have thorough knowledge of the programs they are affecting. Deep knowledge of a program area can only be gained through experience working in or managing that program area, where technical expertise is a more generic skill that can be developed in the private sector or on IT projects from any program area. The need for technical expertise by the project executive is often overrated, especially in the age of the Internet, when even the most seasoned experts have no more than five years experience with the new technologies.

When a seasoned leader from the program area is selected as the project executive of an automation project, consideration must be given to their experience in exercising authority. It is important that the project executive has the authority to redirect a project tactically if problems arise. They must also have the authority to accept or refuse interim vendor deliverables and amend vendor contracts to adjust to project realities, as needed. With that authority must come accountability and incentives must be established for achieving business objectives.

It is important for large and complex projects that an independent source (often known as an Independent Verification and Validation (IV&V) vendor) is available to review interim project progress and to provide outside advice related to technical issues. This type of expert, who is not involved in project execution, should be a trusted technical advisor to the project executive. This independent source should report not only to the project executive but also to an executive oversight (or project control board) comprised of agency executives from all of the program areas affected by the project. It is not appropriate for project control to be exercised from an office of finance or from a data center operation, as they are not accountable for achieving the business objectives. The executive oversight group should be accountable to the legislature and budget and finance authorities, and therefore have authority over the project executive. This keeps agency executives involved with, and responsible for, the success or failure of the project from its onset. It is unreasonable to hold a technologist responsible for achieving program and policy objectives; only program executives can accept that responsibility.

Technical staff, including programmers and systems analysts do not have to reside permanently within agency and divisional program units. In fact, it only is reasonable for departments to have their own application unit if they have multiple and ongoing IT initiatives. In that case, there is an advantage to an in house application development unit. The advantage is that they develop

business knowledge in that program over time. If there is not sufficient activity to justify full time, permanent, developers within a department, that department should have access to a service provider that makes skilled workers accessible to departmental projects on an as needed basis. These service providers could be 3<sup>rd</sup> party vendors or they could be a pool of state employees whose permanent base of operations is a centralized unit housed either at the data centers, or preferably within the operational control of the State's Chief Information Officer (which I will discuss below). Either way this service unit should be incented to provide skilled developers to a project and should not become a bureaucracy of its own. Developers should report to the project executive of any project to which they are assigned, for the duration of their assignment. The project executive and the management of the service area should be mutually responsible for performance evaluations and incentives. There are many examples of this model that I will be happy to describe if the commission would like to pursue this area further.

### **The Chief Information Officer (CIO)**

According to a survey reported in a recent issue of *CIO magazine*, more than 70% of the largest corporations in America have a CIO who are on the their corporate board or executive committee. These CIO's take part in strategic meetings and are expected to contribute on business as well as technology issues. Nearly 60% report directly to their Chief Executive Officer (CEO) or Chief Operations Officer (COO). The reason for this senior level of access and involvement is the evolution of the role of IT from a back room function to a strategic business component that is intertwined with all other business operations. IT is now a strategic tool for product development, service delivery and corporate administration. A CIO who is responsible for these IT assets and their deployment must share responsibility for organizational performance. The skills necessary to succeed in these positions are wildly different than the traditional IT director, or so called CIO in California state government today.

How can a public sector CIO demonstrate so much value to his or her Governor to warrant the kind of access and authority that places them on the Governor's Cabinet, responsible directly to the Governor or his director of state government operations (or in some cases the Chief of Staff)? The CIO must be able to communicate, in program and policy terms, the value of investments in IT to the government enterprise as a whole. The state CIO must demonstrate leadership by establishing a set of value expectations around technology investments that is understood and accepted by every agency and department. They must also be able to establish an approach to assure that the promised benefits of major IT investments are measurably delivered to the state enterprise as a whole and to the funding agencies in particular. The CIO must be able to define benefits and value in terms that are meaningful to the Governor and to the public at large. The CIO must be able to define and measure IT value in terms of increased worker productivity, improved program outcomes, improved customer service

levels and reduced risk. If the CIO cannot present a cohesive business strategy for the role of IT in the state, if the CIO is not invited to participate in non-IT policy and program initiatives, if the CIO cannot describe the potential program and policy value imbedded in the state's IT resources then there is a leadership vacuum.

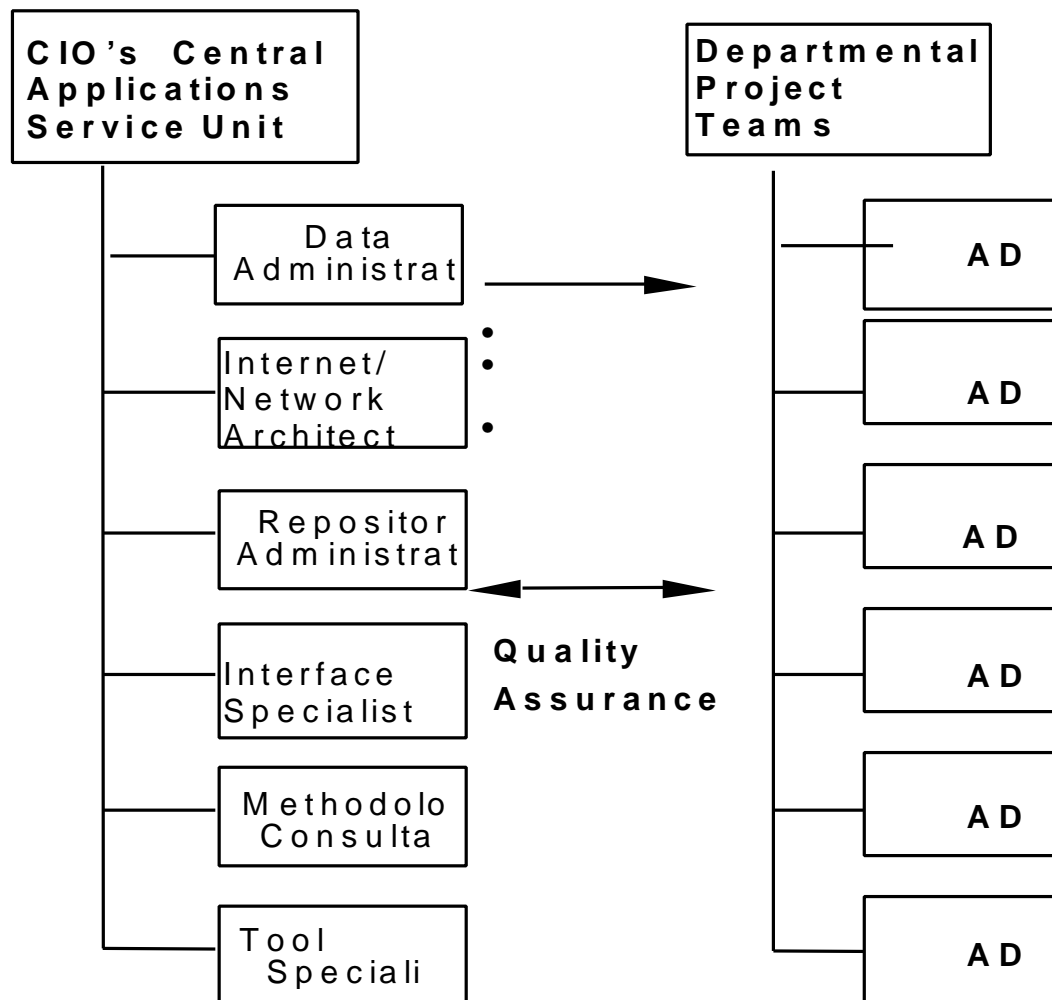
In many states, California included, the person in the role of CIO has been focused in recent months and years too closely on Y2K compliance. Availability of systems and a lack of failure are certainly important but it is hard for the citizen or the political leader to see how all of the money and attention paid to Y2K has in any way resulted in improved government services. While the state government CIO was focused on Y2K alone, their corporate counterparts were delivering transformational IT capabilities. E-commerce initiatives, executive information analysis capabilities, new customer service processes, improved inventory management and manufacturing processes have all been developed through IT leadership initiatives in the private sector, in parallel with Y2K remediation efforts. Lack of failure is not the same as achievement of value. In California and elsewhere the CIO is often content to claim the lack of failure as the product of their leadership. That simply is not enough.

So what should California's CIO be doing? The CIO should be responsible for planning and managing the application development portfolio while promoting new initiatives to exploit technology in changing the way state government does business. The CIO should also be focused on ensuring top-notch operational performance of the state's existing information assets every day, including delivery on expectations associated with ongoing efforts. The CIO is foremost an IT policy maker, masterminding and overseeing technology choices and standards, policies and procedures. The CIO should be responsible for establishing an enterprise information architecture and strategic plan. The CIO must help the state manage its information stores as a valuable resource, and as content for e-government initiatives.

The background and skills the state CIO needs to meet these expectations include substantial experience in the IT function, of course. They need technical know how and they need to be able to manage the technology specialists function. Equally important is experience as a leader of a large business or government enterprise. They need to understand from the business perspective what value looks like to the executive responsible for functional program areas. They need to know when and how to push hard for change, and when to relax and focus on execution. The CIO must have political skills, assisting agency leaders by being a champion for strategic initiatives and helping to secure funding and support from the Governor, the legislature and the public at large for transformational projects. They must be a leader that can bring together individual CIO's in each of the major agencies for statewide enterprise initiatives such as establishing a common data administration process, quality and project controls, and technical infrastructure. As the manager of the enterprise

application portfolio the CIO must promote software reuse between agencies and projects to reduce risk and costs.

So how does this central role interact with the distributed project management function described earlier? The diagram below describes a possible scenario that differentiates those application project related roles that need to be centralized under a CIO's responsibility and those that should be distributed among the agencies and departments.



Specialists and architects should be accountable to the CIO to assure interoperability between applications in the portfolio. These specialists who are farmed out to participate in projects also assure that the projects maximize use of a common technical infrastructure to assure that network and hardware investments are maximized, and costs are minimized. However, the actual project management for each project actually reports into agency management as described above.



Because of the size and scope of the Data Centers in California, they should each have a director reporting directly to the CIO. This will allow the CIO to be responsible for systems availability and performance levels.

The CIO needs a small direct staff that focuses on strategy and architecture. This staff will work with IV&V contractors and participate as advisors to project executive oversight groups. They will also assist in development of e-government and as experts on economic development issues related to technology so that the CIO can meet his responsibility as an IT advisor to the Governor and other cabinet and constitutional officers.

Most importantly the CIO must be a close and trusted advisor to the Governor, a person who the Governor shares a common understanding of political goals and program objectives. I look forward to sharing examples of some effective models from other states that demonstrate this capability.

## **Conclusion**

I look forward to discussing the impact of these proposals on procurement, discussing best practices from industry and business in the comments I will deliver during my oral testimony and in response to questions from each of you. I am also enclosing a proposal for an initiative that our firm is engaged in along with the National Governor's Association and NASIRE the association of State Chief Information Officers that addresses national issues related to state IT performance in terms of delivering IT capability to state government functional programs. This initiative will address some of the concerns of the commission. Thank you for your attention to these comments.